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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.        |
|---|-------------|----------------------|---------------------|-------------------------|
| 10/082,867  | 02/18/2002  | Romain L. Billiet    |                     | 4962                    |
| 7590  | 02/03/2004  |                      | EXAMINER            |                         |
| Romain L. Billiet and Hanh Thi Nguyen<br>135A Malacca Street<br>10400 Penang,<br>MALAYSIA |             |                      |                     | FIORILLA, CHRISTOPHER A |
|   |             | ART UNIT             | PAPER NUMBER        | 1731                    |

DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                         |                |
|------------------------------|-------------------------|----------------|
| <b>Office Action Summary</b> | Application No.         | Applicant(s)   |
|                              | 10/082,867              | BILLIET ET AL. |
|                              | Examiner                | Art Unit       |
|                              | Christopher A. Fiorilla | 1731           |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 29 October 2003.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-7 and 10-15 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-6 and 10-15 is/are rejected.

7) Claim(s) 7 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

|   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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1. Applicant's election without traverse of species "a" in Paper dated 10/29/03 is acknowledged.
2. Claims to the nonelected species have been canceled.
3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed (i.e. the elected method species).
4. Claim 7 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 7 recites that the tools include micromolds for tools or blanks. Micromolds are not the type of tools recited in claim 1 and thus do not further limit claim 1.

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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6. Claims 1,3 and 5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of copending Application No. 09/962,526 in view of Sugiyama et al. (6,080,445). Sugiyama et al. discloses that it is known to produce semiconductor tools from ceramic materials. It would have been obvious to one skilled in the art to produce tools such as these by the process of 09/962,526 in order to obtain tools which do not contaminate semiconductors.

This is a provisional obviousness-type double patenting rejection.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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9. Claims 1,3-6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huggins et al. (5,741,842) in view of Sugiyama et al. (6,080,445) and *Principles of Ceramics Processing* by Reed.

Huggins et al. teaches the basic claimed process of manufacturing a sintered article. The process disclosed by Huggins et al. includes the steps of:

providing a sinterable material in fine particulate form (e.g. ceramics, see abstract) and at least one degradable organic thermoplastic material;

mixing a volume of the sinterable particulate material with a volume of the thermoplastic material;

forming the mixture;

extracting the thermoplastic material from the formed mixture; and

sintering the body.

Note Table 1 of Huggins et al. discloses the amounts of sinterable particulate and thermoplastic material. Thus, it is clear that the amounts of these materials are "accurately determined" as recited in claim 1. Huggins et al. also discloses: micron sized particles at col. 8, lines 57-58, thermoplastic waxes (col. 6, line 46).

Huggins et al. does not specifically recite that the product formed is used as a tool or blank for a tool for use in the assembly and interconnection of semiconductor chips.

Sugiyama et al. discloses the use of ceramic materials in tools for handling semiconductor chips. See e.g. col. 1, lines 32-37. It would have been obvious to one having ordinary skill in the art at the time of the invention to use the molding method of Huggins et al.

to produce the ceramics for semiconductor handling as discussed by Sugiyama et al. in order to reduce the sintering time as discussed by Huggins et al. (col. 2, lines 37-38).

Huggins et al. does not specifically recite that the sintered product is of reduced dimensions.

*Principles of Ceramics Processing* teaches that shrinkage takes place during sintering (p. 583). It is submitted that shrinkage would take place during the sintering disclosed in Huggins et al. (5,741,842).

Wire bonding capillaries and wedges are well known tools for use with semiconductor chips. It would have been obvious to prepare these well known components by the process of Huggins et al. in view of the teaching in Sugiyama et al. that tools for semiconductor processing are preferably made from ceramics so as not to contaminate the chips.

10. Claims 2,10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huggins et al. (5,741,842) in view of Sugiyama et al. (6,080,445) and *Principles of Ceramics Processing* by Reed as applied to claims 1,3-6 and 11 above, and further in view of Croft et al. (6,409,463).

Croft discloses a transfer arm for handling semiconductor chips which has vacuum holes. Croft et al. does not specifically disclose the diameter of the vacuum holes.

Determination of the specific hole diameter would have been well within the realm of routine experimentation to one having ordinary skill in the art at the time of the invention. These parameters would have obviously been selected to optimize the process conditions and/or the properties of the final product.

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Where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device. *In re Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 496 U.S. 830, 225 USPQ 232 (1984).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Fiorilla whose telephone number is (571) 272-1187. The examiner can normally be reached on M-F, 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.



**Christopher A. Fiorilla  
Primary Examiner  
Art Unit 1731**

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